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THE SHORTHAND ALPHABET AND THE REFORMING OF LANGUAGE

By DANIEL WOLFORD LA RUE

EAST STROUDSBURG STATE NORMAL SCHOOL

EVERY writer of shorthand—and there are now legions of them—must have wished, not only that others could write with as much ease and rapidity as himself, but also that there could be as short and accurate a system of printing as he has of writing. Why should we not make use of the shorthand alphabet not only for short writing, but also for short printing (either by hand or press), and a short, direct means to the correct pronunciation of new words?

Isaac Pitman, who invented the system of shorthand now most generally used among English speaking peoples, entertained this idea, and approved it, but never applied it. This paper presents an original plan for adapting the shorthand alphabet to printing, summarizes the results of an experiment in teaching children to read matter printed in this new form, and points out the tremendous educational and social advantages that would accrue if this new type of paper-language were in general use.

According to Isaac Pitman's analysis, there are forty sounds in the English language, twenty-four consonants, twelve simple vowels, and four diphthongs, or double vowels. Adopting (substantially) the Pitmanic symbols, we may represent these sounds as below.

CONSONANTS

- \ = p as in pop
- \ = b as in bob
- | = t as in tat
- | = d as in did
- / = ch as in church
- / = j as in judge
- = k as in kick
- = g as in gig
- = f as in fife
- = v as in vivid

VOWELS (SINGLE)

- (The vertical line is not a part of the vowel symbol, but is used to represent any consonant stroke. A vowel symbol, as a heavy or light dot, stands for different sounds according to its position.)
- |* = a as in pa
- |* = a as in may
- |* = e as in we
- |* = a as in all

(= th as in thick	= o as in go
(= th as in that	= oo as in too
) = s as in sit	= a as in that
) = z as in zoo	= e as in pen
) = sh as in ship	= i as in is
ʃ = zh = z as in azure	= o as in not
œ = m as in mum	= u as in much
œ = n as in noon	= oo as in good
œ = ng as in sing	
œ = l as in lily	
œ = r as in rare	v = i as in lie
œ = w as in will	> = oi as in boil
œ = y as in yes	_ = ou as in foul
œ = h as in hay	_ = eu as in feud

DIPHTHONGS (DOUBLE VOWELS)

This gives us a perfect alphabet, neither redundant nor defective.

In writing shorthand, the consonant characters of a word or phrase are joined together, and the vowels are placed in a certain relation to the consonant strokes, that is, at the beginning, middle, or end of them. The vowel sign has a different sound according to its position. The plan here presented for adapting this alphabet to printing introduces two variations: the consonants are kept disjoined; and the vowels are placed, not at the beginning, middle or end of consonant strokes, but in high, middle, or low position with regard to the line of print. This adapted alphabet, and matter printed in it, will be referred to as Fonoline.

An illustration will make the matter thoroughly clear. Figure 1, which presents three charts used in teaching fonoline to children, shows the symbols used in the fonoline alphabet, and the appearance of words printed in fonoline.

Although various experiments have been made in teaching reading by means of a phonetic alphabet, it appeared worth while to teach a group of beginners to read fonoline, partly to find the degree of effort necessary to learn it, partly to discover whether there would be any difficulty in passing from fonoline to a-b-c English. Should we as a race ever wish to change our alphabet (as the Chinese are doing), this latter question would probably become very important.

Accordingly, fonoline was taught to a group of twelve pupils in a first grade, whose Stanford-Binet intelligence quotients ranged from 75 to 127, with a median of 87.5. In physique and power of application, they were probably somewhat below the

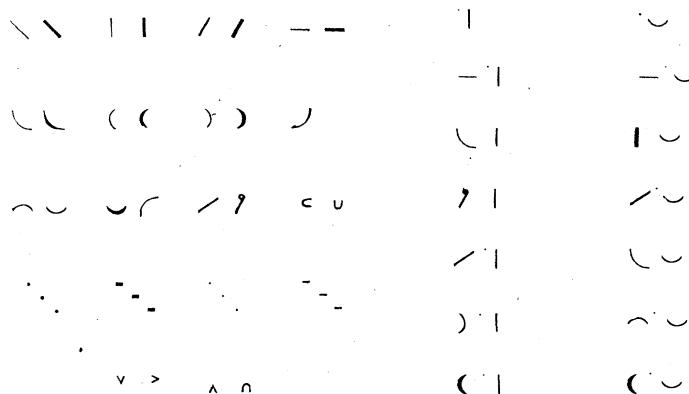
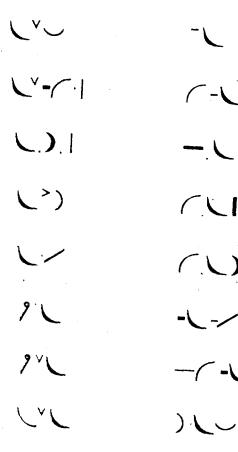


Fig. 7. Three charts, reduced in size, used in the teaching of fonoline. The chart at the upper left shows the fonoline alphabet, omitting the symbol for the sound of zh, which was not used in the first grade vocabulary. The words on the other charts are as shown below, and in the same order.



Words on Chart at Upper Right

at	an
cat	can
fat	Dan
hat	ran
rat	fan
sat	man
that	than

Words on Chart at Left

vine	of
violet	love
visit	give
voice	lived
very	lives
have	over
hive	clover
five	seven

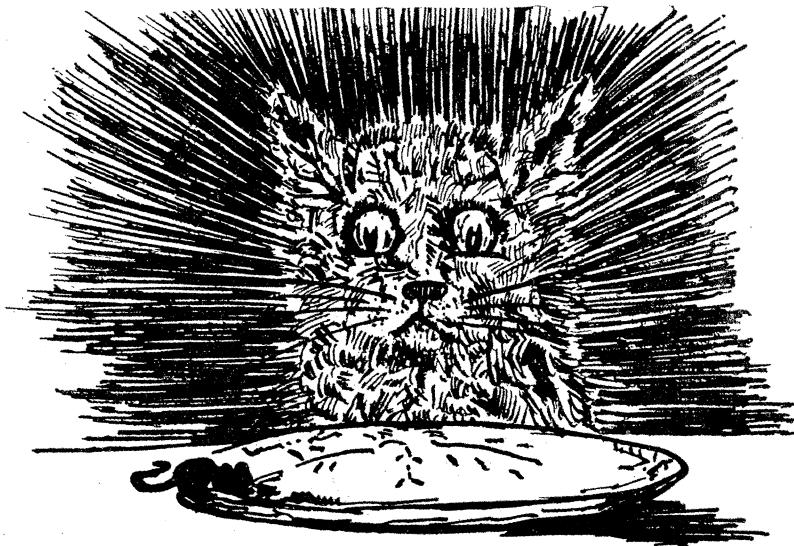
average. They were taught, in the East Stroudsburg State Normal Training School, by two cadet teachers and myself, no one of us having ever before taught a child to read. There was some difficulty also in procuring the necessary type and other materials for keeping the experiment going.¹

At the end of a month (spending a little over an hour a day on the subject), twenty-three sounds had been introduced, and the pupils were attacking new words with fair success. A week later, the brighter pupils were separated from the rest and began

¹ In reporting this experiment, I wish to make acknowledgment of the receipt of financial aid by means of which it was promoted from the American Association for the Advancement of Science.

Acknowledgment of substantial assistance of a different kind is due to Mrs. La Rue, without whose help the necessary reading material could not have been composed, illustrated and printed.

reading such stories as "The Little Red Hen" without the aid of the teacher. At the close of eleven weeks, our advanced class had learned all the symbols, had read about one hundred fifty pages of the Fonoline Primer, and could readily master, independently, any new word of not more than five or six symbols (that is, five or six sounds when spoken), unless it involved some peculiar difficulty. As few words in the first grade vocabulary reach this length,



THE CAT AND THE MOUSE

(- - - - -) (- - - - -)

A wee mouse was eating.

(- - - - -) (- - - - -)

A cat saw her.

(- - - - -) (- - - - -)

The cat said,

"I must have that mouse."

(- - - - -) (- - - - -)

Then away she went.

FIG. 2. Showing fonoline used interlineally to aid in the introduction to a-b-c English. The words that have no fonoline beneath them had already been mastered by the pupils before reaching this story.

we thought it best to pass from this grade of attainment to the study of a-b-c English. At the end of fifteen weeks, the slower section also (containing, it will be remembered, some retarded pupils) having covered all their symbols and read over one hundred pages of the Primer, proceeded to the study of a-b-c English.

Passing from fonoline to ordinary English introduced practically no new problems except those which are always incident to the teaching of reading in English, and we of course used our "perfect" phonetic alphabet to aid in the mastery of the imperfect, partially unphonetic one. The first means employed was that of interlinear printing, placing the a-b-c English above and the corresponding fonoline just below as a key to pronunciation, as shown in the figure. As soon as a word had appeared in the a-b-c type a few times, it was left without the fonoline aid to pronunciation beneath it, whereupon the pupil either remembered it or was forced to go back and find it where it had last appeared.

At the close of the year, our pupils had accomplished, so far as we were able to judge, substantially the same amount of work in a-b-c English, after spending the first ten or fifteen weeks on fonoline reading, as they would have done had they spent the whole year on a-b-c English; that is, their achievements were on a level with those of preceding classes, the time devoted to reading remaining unchanged. Our advanced class won the special commendation of the State examiner, who had no knowledge of how the grade had been taught.

We are inclined to believe that fonoline forms a good introduction to a-b-c English, and that if it could replace the usual system of diacritical marking, time would ultimately be gained through its use. We consider it quite safe to assert that if a pupil of average intelligence and application were given a year of instruction in reading fonoline (especially if there were devoted to reading the two hours per day commonly assigned to it in our city schools), such a pupil would then be able to read anything (printed in that alphabet) which he was capable of understanding. Beyond reviews, no further work in reading would be necessary for one so taught except to train him in the apt expression of those thoughts and feelings which would come to him with maturity. And he would not only know how to read: he would be able to find in the fonoline dictionary any ordinary word that he could pronounce. Further, he could "spell," both orally and in writing (fonoline characters) any word that he could turn his tongue to.

Let us now give our attention to the educational and social advantages that would be ours if such an alphabet as fonoline were brought into common use. Let us keep in mind, too, that

fonoline is advantageous beyond any other phonetic alphabet; for it bears a unique relation to Pitmanic shorthand, the most speedy and efficient means yet devised by the human brain for passing its thoughts down through hand and pen and so recording them on paper.

First, then, does fonoline present an alphabet which adequately represents the sounds of spoken English? We can sum up this matter admirably by quotations from Max Muller: "What I like in Mr. Pitman's system of spelling is exactly what I know has been found fault with by others, namely, that he does not attempt to refine too much, and to express in writing those endless shades of pronunciation, which may be of the greatest interest to the student of acoustics, or of phonetics, as applied to the study of living dialects, but which, for practical as well as for scientific philological purposes, must be entirely ignored Out of the large number of sounds, for instance, which have been catalogued from the various English dialects, those only can be recognized as constituent elements of the language which in and by their difference from each other convey a difference of meaning. Of such pregnant and thought-conveying vowels, English possesses no more than twelve. Whatever the minor shades of vowel sounds in English dialects may be, they do not enrich the language, as such; that is, they do not enable the speaker to convey more minute shades of thought than the twelve typical single vowels If I have spoken strongly in support of Mr. Pitman's system, it is chiefly because it has been tested so largely and has stood the test well."²

Next, if the number of our characters is correct, is their form satisfactory? As to the advantages of simplicity, perhaps the work of Broca and Sulzer can be accepted as authoritative. These investigators concluded that both our letters and the words of which they are composed would be more easily recognized and quickly read if they were simplified in form. "Practically," they report, "the recognition of a letter demands an expenditure of energy that is greater as its form is more complex. Thus we read a V, a T, or an L more easily than an E or a B. From the standpoint of speed of reading and also of the cerebral fatigue caused by the act it would be better to employ simpler letters than those now used. We have thus been led to seek the least complex possible forms, and we have concluded that, for capital letters, they are those shown in Figure 3. For the small letters, where there

² From an article in the *Fortnightly Review* of April, 1876, as quoted in *The Life of Sir Isaac Pitman*, by Alfred Baker, p. 206.

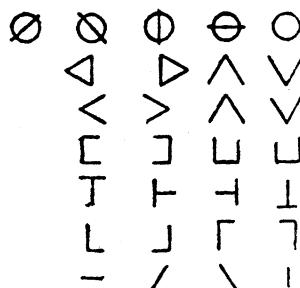


FIG. 3. Showing the simple capitals proposed by Broea and Sulzer. There are two sizes, and two positions with respect to the line, the solutions are more numerous and some are shown in Figure 4.

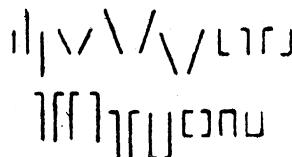


FIG. 4. Simplified small letters proposed by Broea and Sulzer. "We do not wish here to go farther into this question and ask whether it would be worth while to change our present alphabet; but we desire only to point out that these characters, derived from the Phenician alphabet, are not scientifically as perfect as could

Lettres	Valeur	Lettres	Valeur
Ճ	a	Ճ	l
Ճ	b, bh	՚	m
՚	g, gh	՚	n
՚	d, dh	՚	x, s
՚	h <i>doux</i> , é	՚	o
՚	ou, v, w	՚	p, ph
՚	z	՚	ts, s
՚	h <i>dur</i>	՚	kh
՚	th	՚	r
՚	i, y	՚	sh
՚	k	՚	t

FIG. 5. Alteration of modern from ancient letters.

be wished. A glance at Figure 5 shows that all the changes made in transforming the old alphabet into ours are far from being simplifications."³

So far as capitals are concerned, whether simplified or not, they should be dropped altogether. In the teaching of fonoline, we omitted them and never missed them. Further, we were only embarrassed by them, as every teacher of primary reading is, when they appeared in the a-b-c English. The Germans distribute their complex capitals lavishly, to the exasperation of the reader (speaking for myself). The French tendency is better, to omit them as much as possible. Neither the writer nor the reader of shorthand commonly misses capitals or wishes for them. They only make him trouble. Had we grown accustomed from our youth to the use of small letters only, we should then have had the right attitude toward capitals, namely, that they are a useless and expensive luxury; and we should have rejected at once any proposal that they should be introduced into our language. As matters are, we ought to welcome the possibility of further simplifying our alphabet by reducing it from fifty-two characters to forty.

A further question of interest is, do words printed in fonoline have sufficient character and individuality to insure their quick recognition in rapid reading? Students of the psychology of reading seem to agree that glance recognition, as we may call it, depends chiefly on the length of a word, on its consonants, especially those that are so tall as to stick up above the general body of the word, and on its first letter or letters, which, as they strike the eye, serve as a kind of key to the part that follows. It is evident that words would have characteristic lengths and first-letter keys, no matter what alphabet were used. The great importance of the consonants in furnishing the skeletons of words and so giving them characteristic shape must long have been felt, even if not consciously reasoned out; for the Hebrews, centuries ago, left the vowels out of their words and still found them, for the most part, easily legible. The modern writer of Hebrew either fills in his vowels or omits them, as he pleases. So does the writer of Pitmanic shorthand. When writing under speed, he puts in only an occasional key vowel, yet finds his writing easily readable. The joined consonants of a word form an "outline" which flashes into his mind instantaneously when he hears that word pronounced, and which he recognizes at once when he sees it on paper.

I venture to assert that this advantage is carried over, in large

³ This report was published in *La Nature*, Paris, February 13, 1904. The quotation and figures given above are taken from a translation printed in *The Literary Digest* of March 12, 1904.

measure, into matter printed in fonoline. The rapid reader, guided largely by context, as such readers always are, would find his words taking on such a characteristic consonantal shape that he would have little use for the vowels. The consonants would form the chief mass of the average word, and in the great bulk of cases would protrude either above or below their adjacent vowels. Yet if there were doubt in any case, as there might be when two words contained the same consonants in the same order, the vowels would be there to give their voice and settle the matter. But to vowels, generally, we should apply a rule in contrast with that which we apply to children: the vowels should be heard and not seen too conspicuously.

If it should prove desirable to indicate the accent of words, this could be accomplished by any of several simple methods, and in a manner which would cause printers no difficulty.

Let us now consider, but very briefly, how and how much we could shorten and enrich the work of the elementary school through the use of fonoline.

Learning to read would become so easy that many children would learn at home. (One of our pupils retaught a part of her fonoline lessons to her little brother.) At any rate, independent reading, on the part of the average child, would begin before he had spent more than a few weeks in school; and he could then advance, by silent reading, at his own pace, taking up one form of literature after another as fast as he was able to appreciate it.

The subject of spelling would disappear from our programs of study, leaving the time now devoted to it to be turned to some useful purpose. Like the Italians and the Spaniards, we should then have no spelling books in our schools.

The use of the dictionary would never have to be taught as at present; for since, with a phonetic alphabet, the pronouncing of a word is equivalent to the spelling of it, one could readily find in the fonoline dictionary any word that he could pronounce. Not only could any one master his own language quickly, but when foreign tongues were undertaken, he could use what would then be his native alphabet as an aid to the mastery of them also. A "phonetic transcription" would cease to be in any way formidable and would become wholly a help if one could indicate the pronunciation of strange-looking foreign words by using the familiar characters of his own alphabet. An enterprising and scholarly minister, father of one of our pupils, made use of her knowledge of fonoline to introduce her to Hebrew, in which language he was anxious to give her an early start. Pitman's shorthand has been adapted to twenty-one foreign languages, including Latin, and

also to Esperanto. Should any peculiar sound of a foreign tongue require a new symbol, then, it would very likely be ready to hand. Indeed, I do not consider it too wild a dream to hope that *the Pitmanic shorthand alphabet may some day serve as the common alphabet for all the languages of the earth*. I leave others to deduce the various results of this, and will here only remark that I should consider it a very long step toward a universal language, a step which, while suppressing no language, would very likely result in preserving the best elements of all.

In the subject of writing, fonoline, through its relation to shorthand, would secure advantages which no phonetic alphabet not so related to "the winged art" could gain for us. As matters are, we teach our pupils four different forms for each of our twenty-six letters; these are the printed small and capital letters, and the corresponding written forms. Of course, these four forms are sometimes similar, as in the case of the letter *o*; but again they are quite at variance, as with *d*, *e*, *g*, and *l*. With fonoline in use, all this extra and useless learning, together with the whole subject of writing as we now know it, would drop out of existence. Judging as well as I can from the very limited amount of writing fonoline which was done by our experimental class, I should say that, if pupils were given a regular daily period of such practice, they could by the end of the first year in school write anything, expressed in the words of the usual first grade vocabulary, which they would be likely to utter. With a very moderate amount of practice as compared with what is necessary for the learning of ordinary writing, they could write at least as fast as they now do the longhand, and probably considerably faster. There are advantages of position and movement also, which conform more nearly to that which is naturally adopted by young children. For pupils of low mentality, this might be the limit of attainment.

For those who were ordinarily bright of mind and facile in learning, however, it would be but a small beginning. From fonoline the learner could pass, by the gradual and easy introduction of shorthand principles, to shorthand itself. This would be accomplished by such means as the joining of consonant strokes wherever convenient, and the introduction of shortening devices so familiar to the writer of phonography, such as the s-circle and the hooks at the beginnings and endings of strokes. The abbreviated signs for our most common words could also be taught, signs which would soon enable the pupil to write, in the shortest kind of shorthand, more than fifty per cent. of all the language he ordinarily used.

If such a course as I have described were preceded and accom-

panied by fonoline reading, and if we gave to it up through the grades the time which is now devoted to writing, I believe it safe to say that pupils would then be able to write no less than four times as fast as they now can with our cumbersome longhand, and with equal, or even greater legibility.

In the life outside of school there would result great savings in the printing of the language, in typewriting and linotyping, in teaching the feeble-minded, in the problem of Americanization, in progress toward a universal language, and in many other ways.

But the greatest argument, least appreciated because hardest to appreciate, lies, perhaps, in another direction. It is that a quicker alphabet, as we may call it, would make mankind more thoughtful and more social. The mathematician could never have made the progress he has in dealing with number and quantity had he not invented a shorthand method of expressing and working with them. The physicist and the chemist have their shorthand. What scientist does not? Is not this one of the distinguishing features of the modern use of symbols, to concentrate a great bulk of meaning in such brief form that we can hold it all in one grasp of consciousness, reason with it in every way as an inclusive unit of thought work? But of this argument we can offer no more than a suggestion.

Had such an alphabet as fonoline been in common use for the brief span of a century or so, no argument to return to our present slow and cumbersome methods would be heeded for a moment.